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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.               | CONFIRMATION NO.       |
|---|-------------|----------------------|-----------------------------------|------------------------|
| 10/538,863  | 12/19/2005  | Iain Cooper          | 57.0530 US PCT                    | 5729                   |
| 37003 7590 06/07/2007<br>SCHLUMBERGER-DOLL RESEARCH<br>ATTN: INTELLECTUAL PROPERTY LAW DEPARTMENT<br>P.O. BOX 425045<br>CAMBRIDGE, MA 02142 |             |                      | EXAMINER<br>GAY, JENNIFER HAWKINS |                        |
|   |             |                      | ART UNIT<br>3672                  | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>06/07/2007           | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application-No.</b><br>10/538,863 | <b>Applicant(s)</b><br>COOPER ET AL. |  |
|                              | <b>Examiner</b><br>Jennifer H. Gay   | <b>Art Unit</b><br>3672              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 15 and 17-23 is/are rejected.
- 7) ☒ Claim(s) 12, 14 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/14/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 530, 531, 532, 533, and 534. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because the abstract has been constructed as a single run-on sentence instead of a narrative paragraph and contains the implied phrase "is described". Correction is required. See MPEP § 608.01(b).

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Objections***

4. Claims 1, 4, 6, 16, 17, and 20 are objected to because of the following informalities:
- Claims 1, 17, and 20 are objected to because of the use of "and/or". This term is considered to be slightly confusing as it is not clear if applicant is intending to claim both limitations or the limitations in the alternative. It is suggested that "and/or" be changed to --at least one of--.
  - Claim 4 should be reworded as follows for the sack of clarity. --The subpart of claim 1 wherein the outer circumferential surface is further adapted to minimize laterally acting forces or resistance during a sliding action.--
  - Claim 6 should be reworded as follows for the sack of clarity. --The subpart of claim 2 wherein the bottom and top section provide a force-transmitting connection to the drill string thus following a rotational motion of the drill string generated at a surface location.--
  - Claim 16 is objected to as being identical to claim 14.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. Claims 3, 5, 6, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- Claim 3 is considered indefinite because it recites "a cylindrical main section" and it is unclear if this is the same main section as that referred to in claim 2 or a separate main section. If the main section of claim 3 is the same as that of claim 2 then the claim does not further limit claim 2, as "one or more bores" does not differentiate from "one or more outer openings". If the main section of claim 3 is different from that of claim 2 then the claim is further

unclear because the examiner is unsure what applicant considers to be the second main section.

- Claim 5 is considered to be indefinite because it is unclear if “one or two connectors” are different from the “bottom and top section for connection...” of claim 2. As it appears that bottom and top section are for connecting the subpart to the drill string they would be considered connectors and thus claim 5 does not further claim 2. It is suggested that perhaps applicant intended claim 5 to recite that the bottom and top sections comprised connectors and the claim will be treated as such for the purpose of examination.
- Claim 6 is considered indefinite because it recites “a bottom and top section” and it is unclear if this is the same bottom and top section referred to in claim 2 or a separate bottom and top section.
- Claim 23 is considered to be indefinite for the same reasons as those of claim 3.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(f) he did not himself invent the subject matter sought to be patented.

7. Claims 1-6 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Vance (US 2,776,111).

Regarding claim 1: Vance discloses a subpart of a drill string, the subpart including an outer circumferential surface (Figure 1) which is contoured and adapted to engage a wall of an open uncased borehole in a sliding action with a low angle of attack essentially continuously exerting a compacting pressure on mud cake and/or cuttings present in the annulus between the drill string and said wall (1:30-40).

Regarding claims 2 and 3: The subpart includes a bottom and top section 2 for connection to the drill string 20 and a main section 1 having an inner central bore (Figure 2) for the passage of drilling fluid from the surface and one or more outer openings 6 for said drilling fluid and cuttings return flow to the surface wherein an outer contour of said subpart is shaped to engage the open uncased wall of said borehole at an angle of attack of less than 45 degrees and extends to an outer diameter of more than 70% of a nominal diameter of said borehole (Figures 1 and 2).

Regarding claim 4: The outer surface is further adapted to minimize laterally acting forces or resistance during a sliding action (3:72-4:5).

Regarding claim 5: The subpart includes one or two connectors adapted to connect to a drill collar section of the drill string. *Not specifically taught but the subpart must include connectors to be attached to the drill string thus this limitation is inherent.*

Regarding claim 6: The bottom and top section provide force-transmitting connection to the drill string thus following a rotational motion of the drill string generated at a surface location. *Again not specifically taught but as the subpart rotates with the drill string it must include such connections thus this limitation is inherent.*

8. Claims 1, 4-6, 8-11, 13, 15, and 17-23 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. Figure 5 and paragraphs 75-77 of Bailey et al (US 2005/0167159) clearly anticipate the above claims however the applications do not share a single common inventor.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vance.

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Vance discloses all of the limitations of the above claim(s) except for the outer surface being made from an abrasive resistant material. However, as the subpart is being used in an abrasive environment, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the outer surface from an abrasive resistant material to protect the subpart and length the life of the tool.

Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the outer surface from an abrasive resistant, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

### ***Allowable Subject Matter***

11. Claims 12, 14, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

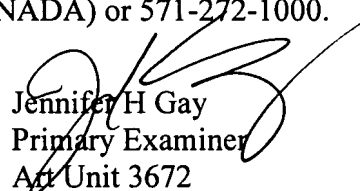
### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H. Gay whose telephone number is (571) 272-7029. The examiner can normally be reached on Mon., Tues., Thurs., and Fri. from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jennifer H Gay  
Primary Examiner  
Art Unit 3672

JHG

6/5/07

